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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,741	01/28/2002	Ichiro Ueno	02049C/HG	5747

1933 7590 05/31/2005

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EXAMINER	
LISH, PETER J	
ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/058,741	UENO ET AL.	
	Examiner	Art Unit	
	Peter J. Lish	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29 and 31-48* is/are pending in the application.

4a) Of the above claim(s) *1-18 and 34-48* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-29 and 31-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3/7/05 have been fully considered but they are not persuasive. The applicant argues, with respect to the rejection over Sato et al. alone, that Sato does not teach a step of preliminary carbonization and that the drying step of Sato et al. does not represent preliminary carbonization. The examiner notes that Sato is read to meet this limitation in two different ways. The first of which relies upon the recycle of some of the carbonized material back into the separation and molding stages. In this manner, it is determined that the recycled carbonized material has undergone "preliminary carbonization". The second of which relies upon the teaching that the drying step is performed utilizing the gas released from the carbonization step, which is inherently at a temperature suitable for carbonization; therefore it is expected that a preliminary carbonization of the waste will take place under the conditions of the drying stage.

The applicant additionally argues that the combination of Sato et al. with Schulz would not have been obvious because the two processes utilize different apparatuses. However, it is noted that Schulz is applied in the rejection simply to show that the temperature of the gas released from the carbonization process and utilized in the drying process is known to be within a particular range, a range that is suitable to provide "preliminary carbonization". The difference in the apparatuses used by the references does not overcome the fact that the processes aim to achieve the same desired effect. Therefore, the use of a temperature range, as taught by Schulz, in the process of Sato et al. in order to obtain the same effect would have been obvious to one of ordinary skill.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 19-28 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (JP 09-053085) in view of Daugherty et al. (US 5,562,743).

Sato et al. teach a process for the preparation of fuel from municipal waste, otherwise known as refuse derived fuel (RDF). The process comprises drying the waste, separating and removing the metals and glass from the organic waste, molding the waste, carbonizing the waste, and optionally activating the waste. After molding and carbonization, the carbonized waste is split up, wherein a portion is maintained for use as a solid fuel, a portion is mixed back in with incoming waste during the molding stage, and a portion is activated by steam activation. The activated carbon product is used to deodorize exhaust gases.

Because the carbonized waste is mixed back in with new waste in the molding step, it is held that the waste is preliminarily carbonized, the preliminary carbonized products are molded, and the molded products are carbonized. No difference is seen between the process of Sato et al. and that of the instantly claimed invention.

Regarding the temperatures used for the preliminary carbonization and the carbonization, Sato et al. does not explicitly teach a temperature range for the carbonization, however, it would have been obvious to one of ordinary skill at the time of invention to perform the carbonization at a temperature within the claimed ranges, such as between 600 and 800 °C, as these

temperatures are known to be useful for carbonization and furthermore because doing so is seen to be the optimization of a known process, which could have been determined through routine experimentation, and is held to be obvious by *In re Boesch*, 205 USPQ 215.

Regarding the O/C and the H/C atomicity ratios of the wastes, it would have been obvious to one of ordinary skill at the time of invention to utilize any municipal waste in the process of Sato et al., including those with atomicity ratios within the claimed ranges.

Regarding the limitation of molding the waste to produce briquettes, Sato et al. do not explicitly teach the forming of briquettes, however, the molding of waste into briquettes for use as a solid fuel source is well known in the art and it would have been obvious to one of ordinary skill at the time of invention to use the molding operation of Sato et al. for the production of briquettes, because Sato et al. aim to produce a solid fuel source.

Sato et al. does not teach the use of binders in the molding step. Daugherty teaches the formation of solid refuse derived fuel pellets from municipal or industrial wastes. Daugherty also discusses the role of binders in the formation of such pellets. Daugherty teaches that binders such as hydraulic cements and organic based materials are often incorporated into the molding of the pellets in order to increase the density and integrity of the pellets. Daugherty also teaches that an alkaline earth metal hydroxide binder has the additional effect of lowering the sulfur content of the gases that result upon the burning of the refuse derived fuel. It would have been obvious to one of ordinary skill at the time of invention to use a binder in the molding operation of Sato et al. in order to achieve the benefits taught by Daugherty et al.

Claims 19-28, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (JP 09-053085) alone or in view of Shulz (US 4,052,173) and further in view of Daugherty et al. (US 5,562,743).

Sato et al. teach a process for the preparation of fuel from municipal waste, otherwise known as refuse derived fuel (RDF). The process comprises drying the waste, separating and removing the metals and glass from the organic waste, molding the waste, carbonizing the waste, and optionally activating the waste. After molding and carbonization, the carbonized waste is split up, wherein a portion is maintained for use as a solid fuel, a portion is mixed back in with incoming waste during the molding stage, and a portion is activated by steam activation. The activated carbon product is used to deodorize exhaust gases. The drying step is performed utilizing the gas released from the carbonization step, which is inherently at a temperature suitable for carbonization, therefore it is expected that a preliminary carbonization of the waste will take place under the conditions of the drying stage.

Sato et al. do not explicitly teach a temperature at which the drying process is performed. Shulz teaches a process for the conversion of municipal wastes into fuel wherein the drying of organic waste takes place at temperatures between 200 and 900 °F (93 - 482 °C) by utilizing the gas released from the subsequent pyrolysis, or carbonization of the waste. It would have been obvious to one of ordinary skill at the time of invention to perform the drying operation of Sato et al. at a temperature within the range taught by Shulz while utilizing the gas released from the carbonization operation, as doing so is known to achieve the desired effect. In doing so, it is expected that such an operation would yield at least partial carbonization of the waste during the drying operation.

Regarding the temperatures used for the preliminary carbonization and the carbonization, Sato et al. does not explicitly teach temperature ranges for the individual operations, however, it would have been obvious to one of ordinary skill at the time of invention to perform the operations at a temperature within the claimed ranges, as doing so is seen to be the optimization of a known process, which could have been determined through routine experimentation, and is held to be obvious by *In re Boesch*, 205 USPQ 215. Additionally, Shulz teaches the drying (preliminary carbonization) of the waste at a temperature of between about 93-482 °C and the pyrolysis, or carbonization, of the waste at a temperature of between about 482-1093 °C. It would have been obvious to one of ordinary skill at the time of invention to perform the corresponding operations of Sato et al. at temperatures within the ranges taught by Shulz, as doing so is known to achieve the desired effect.

Regarding the O/C and the H/C atomicity ratios of the wastes, it would have been obvious to one of ordinary skill at the time of invention to utilize any municipal waste in the process of Sato et al., including those with atomicity ratios within the claimed ranges.

Regarding the limitation of molding the waste to produce briquettes, Sato et al. do not explicitly teach the forming of briquettes, however, the molding of waste into briquettes for use as a solid fuel source is well known in the art and it would have been obvious to one of ordinary skill at the time of invention to use the molding operation of Sato et al. for the production of briquettes, because Sato et al. aim to produce a solid fuel source.

Sato et al. does not teach the use of binders in the molding step. Daugherty teaches the formation of solid refuse derived fuel pellets from municipal or industrial wastes. Daugherty also discusses the role of binders in the formation of such pellets. Daugherty teaches that binders

such as hydraulic cements and organic based materials are often incorporated into the molding of the pellets in order to increase the density and integrity of the pellets. Daugherty also teaches that an alkaline earth metal hydroxide binder has the additional effect of lowering the sulfur content of the gases that result upon the burning of the refuse derived fuel. It would have been obvious to one of ordinary skill at the time of invention to use a binder in the molding operation of Sato et al. in order to achieve the benefits taught by Daugherty et al.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. in view of Daugherty et al., or Sato et al. in view of Shulz and further in view of Daugherty et al. as applied to claim 19 above, and further in view of Gulley et al. (US 4,561,860).

Sato et al. does not explicitly teach the addition of coal or coke to the waste before the molding process. Gulley et al. teaches a process for the formation of municipal wastes into a solid fuel source wherein the wastes are dried and then molded with coal dust in a pellet press to produce pellets, or briquettes. The coal is taught to have a beneficial effect on the pelleting machine and the fuel pellets containing the coal have the advantages of being more stable and more similar to conventional fuels in appearance and combustion characteristics, thereby increasing their marketability. The pellets can also be handled and burnt more easily in conventional equipment. It would have been obvious to one of ordinary skill at the time of invention to add coal to the waste materials in the molding process of Sato et al. in order to produce a fuel source with the benefits taught by Gulley et al.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

PL

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